

# Kepler CMOS Camera

## KL4040

### 4K x 4K at 14 fps

The KL4040 scientific CMOS camera has the same pixel size and imaging area as the popular KAF-16803 CCD, but with 1/3 the noise and 40% higher quantum efficiency. Kepler cooled sCMOS cameras provide ultra-high sensitivity, ultra-low noise, and high frame rates, all at game-changing price to performance ratio.

#### Technical Data

|                             |                                       |
|-----------------------------|---------------------------------------|
| Sensor Type                 | Front Illuminated CMOS                |
| Sensor                      | GPixel GSense4040                     |
| Shutter Type                | Rolling                               |
| Active Pixels               | 4096 x 4096                           |
| Pixel Size (microns)        | 9 x 9 $\mu\text{m}$                   |
| Imaging Area (Diagonal)     | 36.8 X 36.8 mm (52 mm)                |
| Full Well Capacity          | 70000 electrons                       |
| Typical Readout Noise       | 3.7 e-                                |
| Dynamic Range               | 85.2 dB                               |
| Frame Rate                  | 14 fps (QSFP; 24 Q4 2019)             |
| Cooling Method <sup>1</sup> | Air and Liquid                        |
| Max. Cooling (Air)          | 40°C below ambient                    |
| Temperature Stability       | 0.1°C                                 |
| Dark Current (typical)      | 0.15 eps at -20C                      |
| Interface                   | USB 3.0 (Optional QSFP <sup>2</sup> ) |
| Data Bit Depth              | 16 bit <sup>3</sup>                   |
| Optional Shutter            | 65mm                                  |
| Optional Mounts             | Medium Format Recommended (6x7)       |
| Subarray Readout            | Standard                              |
| External Trigger In/Out     | Standard                              |
| SDK / Software              | Kepler SDK / FLI Pilot                |
| Weight                      | 4 lbs (1.8 kg)                        |

<sup>1</sup> Liquid circulation connectors sold separately

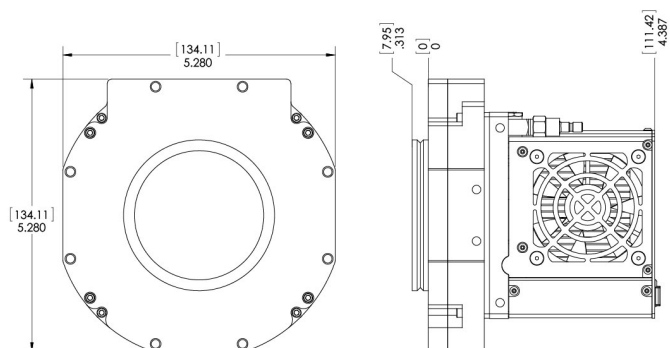
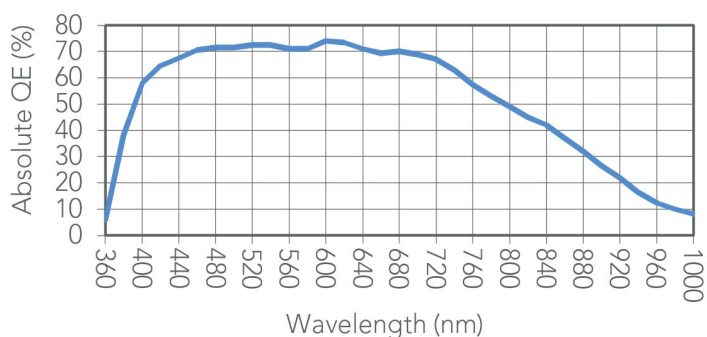
<sup>3</sup> 16-bit data merged from two 12 bit converters

<sup>2</sup> QSFP = Quad Small Form factor Pluggable: high speed fiber optic interface



Also available with 65mm shutter

#### Absolute Quantum Efficiency



See [www.flicamera.com](http://www.flicamera.com) for alternate configurations